COSEWIC
Assessment and Update Status Report

on the

Slender Bush-clover
Lespedeza virginica

in Canada

ENDANGERED
2000

COSEWIC
COMMITTEE ON THE STATUS OF
ENDANGERED WILDLIFE
IN CANADA

COSEPAC
COMITÉ SUR LA SITUATION DES
ESPÈCES EN PÉRIL
AU CANADA

COSEWIC status reports are working documents used in assigning the status of wildlife species suspected of being at risk. This report may be cited as follows:

Please note: Persons wishing to cite data in the report should refer to the report (and cite the author(s)); persons wishing to cite the COSEWIC status will refer to the assessment (and cite COSEWIC). A production note will be provided if additional information on the status report history is required.

COSEWIC 2000. COSEWIC assessment and update status report on the slender bush-clover *Lespedeza virginica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 9 pp.

Cedar, K. 1999. Update COSEWIC status report on the slender bush-clover *Lespedeza virginica* in Canada, *in* COSEWIC assessment and update status report on slender bush *Lespedeza virginica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 1-9 pp.

Previous report:

Pratt, P.D. 1986. COSEWIC status report on the slender bush-clover *Lespedeza virginica* in Canada. Committee on the Status of Endangered Wildlife in Canada. 33 pp.

Production note:
The report originally prepared by the author and used to designate the species has been modified by Erich Haber, Species Specialist Group for Plant and Lichens to more closely conform to the standardized format adopted by COSEWIC. It has also been augmented with some additional information from the report by Pratt (1986); supplementary distributional maps and photographs of the flowers are also now included.

For additional copies contact:

COSEWIC Secretariat
c/o Canadian Wildlife Service
Environment Canada
Ottawa, ON
K1A 0H3

Tel.: (819) 997-4991 / (819) 953-3215
Fax: (819) 994-3684
E-mail: COSEWIC/COSEPAC@ec.gc.ca
http://www.cosewic.gc.ca

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COSEWIC
Assessment Summary

Assessment Summary – May 2000

Common name
Slender bush-clover

Scientific name
Lespedeza virginica

Status
Endangered

Reason for designation
A geographically highly restricted species with fewer than 250 plants at risk from low seed set, successional changes in habitat, fluctuating subpopulation sizes and ongoing losses of plants.

Occurrence
Ontario

Status history
Designated Endangered in April 1986. Status re-examined and confirmed Endangered in April 1999 and May 2000. May 2000 assessment based on new quantitative criteria applied to information from the existing April 1999 status report.

COSEWIC
Executive Summary

Slender Bush-clover
Lespedeza virginica

Species Information

Slender bush-clover (*Lespedeza virginica* (L.) Britt.) is a perennial herb, generally less than 1 m tall, with one to several erect, hairy, stems that sometimes branch near the top of the plant. The leaves are numerous, strongly ascending and consist of three linear to narrowly oblong, generally hairy, leaflets. The purple, pea-like flowers are borne in short, few-flowered racemes that arise in the leaf axils and flower from August to September. Fruits are slightly hairy pods, 4-7 mm long.

Distribution

Slender bush-clover occurs in the United States from New England and Kansas south to Florida and Texas. In Canada it is found at two locations within the City of Windsor in southwestern Ontario.

Habitat

It is a species of tall grass prairie relict sites on sandy soils.

Biology

The species requires open areas for establishment of its seedlings. It does not appear to be able to regenerate under dense shade nor withstand even moderate levels of interspecific competition.

Population Sizes and Trends

When first designated in 1986 a single population was known consisting of about 150 plants. In 1997, two small populations were extant with a total of fewer than 200 plants.

Limiting Factors and Threats

Succcessional changes resulting in shading and interspecific competition are threats as are inadvertent destruction of plants within its currently protected sites.

Special Significance of the Species

No special characteristics or significance for this species are known.

Existing Protection or Other Status Designations

Although slender bush-clover was designated as an endangered species in Canada in 1986 it is not presently protected under the Ontario Endangered Species Act.

The two sites in Windsor are both within protected areas where monitoring of the species and management of its habitat are on-going.

COSEWIC MANDATE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) determines the national status of wild species, subspecies, varieties, and nationally significant populations that are considered to be at risk in Canada. Designations are made on all native species for the following taxonomic groups: mammals, birds, reptiles, amphibians, fish, lepidopterans, molluscs, vascular plants, lichens, and mosses.

COSEWIC MEMBERSHIP

COSEWIC comprises representatives from each provincial and territorial government wildlife agency, four federal agencies (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biosystematic Partnership), three nonjurisdictional members and the co-chairs of the species specialist groups. The committee meets to consider status reports on candidate species.

DEFINITIONS

Species	Any indigenous species, subspecies, variety, or geographically defined population of wild fauna and flora.
Extinct (X)	A species that no longer exists.
Extirpated (XT)	A species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	A species facing imminent extirpation or extinction.
Threatened (T)	A species likely to become endangered if limiting factors are not reversed.
Special Concern (SC)*	A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.
Not at Risk (NAR)**	A species that has been evaluated and found to be not at risk.
Data Deficient (DD)***	A species for which there is insufficient scientific information to support status designation.

* Formerly described as "Vulnerable" from 1990 to 1999, or "Rare" prior to 1990.
** Formerly described as "Not In Any Category", or "No Designation Required."
*** Formerly described as "Indeterminate" from 1994 to 1999 or "ISIBD" (insufficient scientific information on which to base a designation) prior to 1994.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 as a result of a recommendation at the Federal-Provincial Wildlife Conference held in 1976. It arose from the need for a single, official, scientifically sound, national listing of wildlife species at risk. In 1978, COSEWIC designated its first species and produced its first list of Canadian species at risk. Species designated at meetings of the full committee are added to the list.

Environment Canada | Environnement Canada
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Canada

The Canadian Wildlife Service, Environment Canada, provides full administrative and financial support to the COSEWIC Secretariat.

Update
COSEWIC Status Report

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in Canada

Karen Cedar[1]

1999

[1]Ojibway Nature Centre
Windsor Parks and Recreation
5200 Matchette Road
Windsor, ON
N9C 4E8

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SPECIES INFORMATION

Name and classification

Scientific name: *Lespedeza virginica* (L.) Britt.

Common name: Slender bush-clover

Family name: Fabaceae (pea family)

Major plant group: Dicot flowering plant

Description

Slender bush-clover is a perennial herb, generally less than 1 m tall, with one to several erect, hairy, stems that sometimes branch near the top of the plant. The leaves are numerous, strongly ascending and consist of three linear to narrowly oblong, generally hairy, leaflets. The purple, pea-like flowers are borne in short, few-flowered racemes that arise in the leaf axils and flower from August to September (Figure 1). Fruits are slightly hairy pods, 4-7 mm long.

DISTRIBUTION

Global range

Slender bush-clover occurs in the United States from New England and Kansas south to Florida and Texas (Figure 2).

Canadian range

Its only Canadian occurrence is in Essex County in southwestern Ontario (Figure 2). Currently there are two extant, native locations: Ojibway Park and Tallgrass Prairie Heritage Park, both located in the City of Windsor.

HABITAT

In Ontario, slender bush-clover is known from prairie relicts in Essex County. All of the recent sightings are in areas that possess distinct habitat similarities. Specifically, they are open, dry or dry-mesic sites on sandy soils, with exposed mineral soil and ground layer vegetation dominated by a specific association of prairie forbs (Pratt 1986).

The apparent requirement of exposed mineral soil is an indication that the presence of slender bush-clover may be of a relatively brief duration at any single site without some form of disturbance to maintain suitable habitat conditions (Pratt 1986).

Figure 1. Flowering portions of slender bush-clover plants (above, K. Cedar; below, P. Pratt).

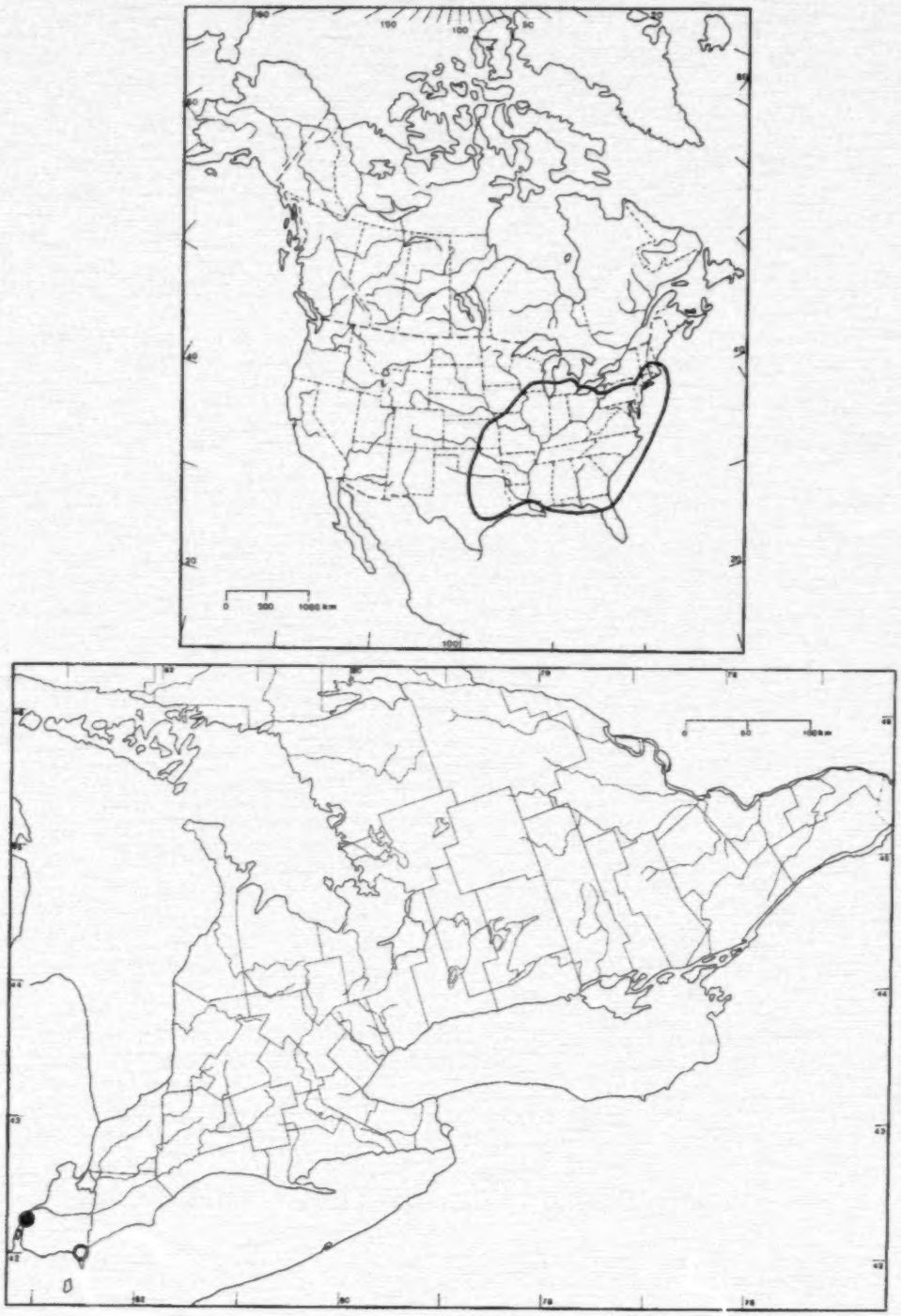

Figure 2. Global range (above) and Ontario distribution of slender bush-clover (from Gillett (1984) in Argus et al. 1982-1987). Solid black symbol in Ontario map represents the two Windsor localities; the open circle indicates the original historic location at Leamington.

The Tallgrass Prairie Heritage Park site is filling in with herbaceous and woody species and there is virtually no exposed mineral soil remaining. The successional change in the habitat at this site poses a serious threat to the continued persistence of slender bush-clover at this location. A controlled disturbance, in the form of scraping, might provide continued habitat, however, regular prescribed burning may be sufficient to maintain suitable habitat for the species at this site.

The ground cover of the Ojibway Park site has increased to 5% since its protection in 1992. The habitat is an open, sandy clearing with large areas of exposed mineral soil. The current population of slender bush-clover occupies less than 1 % of the clearing. Associated species include *Lespedeza capitata, Lespedeza intermedia, Lespedeza hirta, Lechea villosa, Lupinus perinnis*, and *Scleria pauciflora*. The large amount of apparently suitable habitat together with a slow rate of infilling provide an excellent opportunity for slender bush-clover to expand its population within the clearing.

BIOLOGY

Since 1985 slender bush-clover has been cultivated in the gardens of the Ojibway Nature Centre as a precaution against catastrophic elimination of the Tallgrass Prairie Heritage Park site. Seeds from the Tallgrass Prairie Heritage Park site were easily germinated in sand. However, mature fruiting plants only produce a few hundred seeds and this may limit their ability to colonize new habitat.

Recently the Rural Lambton Stewardship Network has also been successful in germinating seeds obtained from the Tallgrass Prairie Heritage Park site. This organization will be attempting to propagate large numbers of seedlings for use in future tallgrass prairie restoration sites in southwestern Ontario (Delaney, pers. comm.1997). [Other aspects of the biology may be found in the original status report by Pratt (1986)]

The species requires open areas for establishment of its seedlings. It does not appear to be able to regenerate under dense shade nor withstand even moderate levels of interspecific competition.

POPULATION SIZES AND TRENDS

Until 1977 slender bush-clover was thought to be extirpated from Canada as the only recorded specimen was one collected by John Macoun on July 30,1892, at Leamington, Ontario (Pratt 1986). This location has become heavily urbanized over the past century. The original population has never been relocated. However, in 1977 the presence of slender bush-clover was reported by Joe Johnson on a site adjacent to Titcombe Road in Windsor, Ontario. Thereafter, this population was monitored annually and in 1984 the population was estimated at 150 individuals (Pratt 1986).

On August 30,1979, Paul Pratt discovered a population of approximately 50 plants in the City of Windsor, Ontario, adjacent to Ojibway Park. However, in 1984, after several years of use as a dirt bike track, the site was devoid of vegetation and the population could not be relocated (Pratt 1986).

In June 1993 K. Cedar and Paul Pratt discovered one plant on a trail edge at Black Oak Heritage Park but an extensive search in 1997 could not locate that plant nor any others nearby.

Extant locations (1997)

1) City of Windsor, Titcombe Road, now Tallgrass Prairie Heritage Park
   - 22 plants, 8 fruiting individuals and 14 non-fruiting, in an area approximately 30 m^2 (verified September 27, 1997); this represents a continued decline from 150 plants in 1984. This habitat will require management as there is no other suitable habitat for the species in close proximity.

2) City of Windsor, Ojibway Parkway, now Ojibway Park
   -160 plants, majority of which were fruiting individuals, in an area approximately 15 m^2 (population relocated September 27,1997); currently there is a large amount of suitable unoccupied habitat for slender prairie-clover at this site.

Unconfirmed occurrence

A new sighting of a single plant growing on a walking trail was made on June 15,1993 at the Black Oak Heritage Park (City of Windsor). The presence of this plant could not be confirmed on September 27, 1997. It is assumed to be extirpated.

M. J. Oldham (1993) listed slender bush-clover for Lambton County based on its listing for Pinery Provincial Park in the Lambton County ESA report (University of Waterloo,1980). This report is unverified and others who have botanized Pinery Provincial Park have not reported this species. Oldham considers it a doubtful report unless substantiating evidence can be found (Oldham, pers. comm.1997).

LIMITING FACTORS AND THREATS

A natural limiting factor for slender bush-clover is its dependence on occasional soil disturbance to provide an environment with low competition and full sun. The tendency in protected areas is to allow plant succession and prevent any disturbance to vegetation. Over time the current sites will become unsuitable for this species unless management plans take this problem into consideration.

Another limiting factor may be the relatively low seed production that reduces the ability of slender bush-clover to quickly invade suitable habitat.

Incidental human disturbance continues to pose an immediate threat though not to the extent nor the severity as in 1985. Both the Tallgrass Prairie Heritage Park site and the Ojibway Park site would be adversely affected by garbage dumping or soil removal.

The single known plant at Black Oak Heritage Park was probably destroyed from disturbance by off road vehicles.

Certain biological features also contributed to this species' original designation as endangered. Specifically, its dependance on exposed mineral soil and its inability to regenerate under dense shade or to withstand moderate levels of interspecific competition (Pratt 1986).

SPECIAL SIGNIFICANCE OF THE SPECIES

No special characteristics or significance for this species are known.

EXISTING PROTECTION OR OTHER STATUS

Although slender bush-clover was designated as an endangered species in Canada in 1986 it has yet to be protected under the Ontario Endangered Species Act.

Since 1986, various measures have been taken to help ensure the survival of the species in Ontario. Most importantly the threat of residential development has been eliminated from all of the currently known sites.

The location of the extant colony at Titcombe Road was acquired by the Ontario Heritage Foundation in 1990 and is administered by the City of Windsor as part of Tallgrass Prairie Heritage Park. The protection of this site has removed the threat of development and reduced the impact of human activity.

The site at Ojibway Parkway was acquired by the City of Windsor and incorporated into Ojibway Park, a protected area, in 1992. Protecting the Ojibway Parkway site, a large sand pit, has eliminated dirt bike use and allowed plants to recolonize the open sand habitat.

Prescribed burning, as a management tool, has been used at both the Tallgrass Prairie Heritage Park and Ojibway Park sites to maintain the open aspect of each habitat. The benefits of prescribed burning for L. virginica include reduced competition from woody species and an increased amount of exposed mineral soil for seedling establishment.

SUMMARY OF STATUS REPORT

Slender bush-clover was designated as endangered in 1986 due to the single population then known consisting of only about 150 plants. Additionally a very serious threat to the species at the time was the risk of residential development as the site was located on privately owned land. Slender bush-clover is now known from two sites within the City of Windsor. Its population presently (in 1997) consists of fewer than 200 plants. The species is now present within protected areas, is being monitored and its habitat is managed to minimize competition from other plants.

ACKNOWLEDGEMENTS

Paul Pratt provided invaluable expertise and assistance with fieldwork and the preparation of this report. Kim Delaney provided information on the propagation of slender bush-clover by the Rural Lambton Stewardship Network. Michael Oldham and Dorothy Tiedje provided information on the Lambton County report. Funding provided by the Canadian Wildlife Service, Environment Canada.

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THE AUTHOR

Karen Cedar has a B.Sc. in biology and has worked at the Ojibway Nature Centre, Windsor Parks and Recreation, since 1991. She has worked as a coordinator for the Ontario Tree Atlas and undertaken numerous plant surveys in Windsor and LaSalle. She is the co-author of the Life Science Inventory of the Spring Garden Unit, Ojibway Prairie Remains ANSI.